(C2), the order of contacting these components with each other is not also specifically defined, like in the case (i). Preferably, however, the component (C1) and the component (C2) are first contacted with each other prior to being contacted with the other components. The same as in the case (i) shall apply also to the case (ii) of producing the catalyst containing the optional component (D).

(iii) In the case of which does not use the component (B), the order of contacting these components with each other is the same as mentioned above.

(2) Blend ratio of constituent components:

(i) In the case of using the component (B):

<1> Regarding the ratio by mol of the component (A) to the component (B), referred to is a case where an organoaluminium compound is used as the oxygen-containing compound of the component (B). In that case, the molar ratio of the component (A) to the component (B) may fall between 1/1 and 1/10,000, but preferably between 1/10 and 1/1,000, in terms of the molar ratio to the aluminium atom in (B). Referred to is a case where a boron compound is used as a compound capable of reacting with a transition metal compound to form an ionic complex of the component (B). In that case, the molar ratio of the component (A) to the component (B) may fall between 1/0.5 and 1/10, but preferably between 1/0.8 and 1/5, in terms of the molar ratio to the boron atom in (B).

(ii) In the both cases of using the component (B) and not using the component (B):

<1> Regarding the ratio by mol of the component (A) to the component (C), referred to is a case where an aluminium compound is used as the component (C). In that case, the molar ratio of the component (A) to the component (C) may fall between 1/0.5 and 1/1,000, but more preferably between 1/1 and 1/100, in terms of the molar ratio to the aluminium atom in (C). Regarding the ratio by mol of the component (A) to the component (D), referred to is a case where an aluminium compound is used as the component (D). In that case, the molar ratio of the component (A) to the component (D) may fall between 1/0.5 and 1/1,000, but preferably between 1/1 and 1/100, in terms of the molar ratio to the aluminium atom in (D).

<2> Where the catalyst contains a combination of the component (C1) and the component (C2), but not the component (C), the molar ratio of (C1) to (C2) may fall between 1/0.1 and 1/10, precisely between 1/0.5 and 1/2, but more preferably between 1/0.8 and 1/1.2.

Regarding the ratio by mol of the component (A) to the component (C2), referred to is a case where an aluminium compound is used as the component (C2). In that case, the molar ratio of the component (A) to the component (C2) may fall between 1/0.5 and 1/1,000, but preferably between 1/1 and 1/100, in terms of the molar ratio to the aluminium atom in (C2).

Regarding the blend ratio of the component (D), the same as in the case <1> shall apply also to the case <2>.

(3) Condition for contacting constituent components:

To produce the catalyst, the constituent components may be contacted with each other in an inert atmosphere of nitrogen or the like, at a temperature not higher than the temperature at which the catalyst is used for copolymerization. As the case may be, they may be contacted with each other at a temperature falling between -30 and 200°C.

II. Method for producing olefin-styrene copolymers:

1. Monomers to be polymerized:

In the method of the invention for producing olefin-styrene copolymers, used is the above-mentioned catalyst for copolymerization of olefins and styrenes..

Olefin for the method are not specifically defined, but preferred are α-olefins having from 2 to 20 carbon atoms. Especially preferred are ethylene and propylene.

They include α-olefins such as ethylene, propylene, 1-butene, 3-methyl-1-butene, 4-methyl-1-butene, 4-phenyl-1-butene, 1-pentene, 3-methyl-1-pentene, 4-methyl-1-pentene, 3,3-dimethyl-1-pentene, 3,4-dimethyl-1-pentene, 4,4-dimethyl-1-pentene, 1-hexene, 4-methyl-1-hexene, 5-methyl-1-hexene, 6-phenyl-1-hexene, 1-octene, 1-decene, 1-dodecene, 1-tetradecene, 1-hexadecene, 1-octadecene, 1-eicosene,